

1. A method of depositing a glass-like coating having at least one layer onto a substrate that includes at least one non-planar surface, the method comprising the steps of:

forming a glass-like coating, wherein the glass-like coating is comprised of at least one coating layer; and

depositing, via ion plating deposition, the at least one coating layer onto a substrate having at least one non-planar surface such that each of the at least one coating layer is conformal throughout the substrate, including throughout each of the at least one non-planar surface.

2. The method of claim 1, wherein the step of depositing the at least one coating layer onto a substrate is accomplished such that each of the at least one coating layer has a predetermined thickness, wherein the sum of the thicknesses of each of the at least one coating layer is in the range of about 5 nanometers to 5000 nanometers.

3. The method of claim 3, wherein the sum of the thicknesses of each of the at least one coating layer is in the range of about 10 nanometers to 1000 nanometers.

4. The method of claim 1, wherein each of the at least one non-planar surface is selected from the group consisting of at least one grating, at least one undulating surface, at least one well, and at least one stepped surface.

5. The method of claim 1, wherein the at least one coating layer is a thin film.

6. The method of claim 5, wherein the at least one coating layer is an oxide thin film.

7. The method of claim 6, wherein the at least one coating layer is a metal oxide thin film.

8. The method of claim 1, wherein the coating is comprised of a plurality of coating layers.

9. The method of claim 8, wherein the plurality of coating layers includes a plurality of alternating metal oxide layers.

10. The method of claim 1, wherein the step of forming a coating layer includes introducing a coating material in the form of a reagent.
11. The method of claim 10, wherein the reagent is selected from the group consisting of silicon, titanium, aluminum, tantalum, hafnium and zirconium.
12. The method of claim 1, wherein the substrate is selected from the group consisting of a glass substrate, a metal substrate, a plastic substrate, a semiconductor substrate, and an electronic device substrate.
13. The method of claim 1, wherein the substrate is positioned in an ion plating coating apparatus during the formation step, the coating apparatus comprising:
a coating vessel capable of being evacuated to a reduced pressure;
an ion plating deposition plasma source; and
at least one associated electron beam gun.
14. A substrate, comprising:
at least one non-planar surface coated with a glass-like coating, wherein the glass-like coating includes at least one coating layer, and wherein each of the at least one coating layer is conformal throughout each of the at least one non-planar surface of the substrate.
15. The substrate of claim 14, wherein each of the at least one coating layer has a predetermined thickness, and wherein the sum of the thicknesses of each of the at least one coating layer is in the range of about 5 nanometers to 5000 nanometers.
16. The substrate of claim 15, wherein the sum of the thicknesses of each of the at least one coating layer is in the range of about 10 nanometers to 1000 nanometers.
17. The substrate of claim 14, wherein the substrate is selected from the group consisting of a glass substrate, a metal substrate, a plastic substrate, a semiconductor substrate, and an electronic device substrate.

18. The substrate of claim 14, wherein each of the at least one non-planar surface is selected from the group consisting of at least grating, at least one undulating surface, at least one well, and at least one stepped surface.
19. The substrate of claim 14, wherein the at least one coating layer is a thin film.
20. The substrate of claim 19, wherein the at least one coating layer is an oxide thin film.
21. The substrate of claim 20, wherein the at least one coating layer is a metal oxide thin film.
22. The substrate of claim 14, wherein the coating is comprised of a plurality of coating layers.